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New AFRL chief technologist welcomed

by 2nd Lt. Morgan J. O'Brien III, AFRL Public Affairs

Barbara Wilson

WRIGHT-PATTERSON AFB, Ohio — The Air Force Research Laboratory, headquartered at Wright Patterson Air Force Base, recently brought on board a chief technologist, Dr. Barbara Wilson. In this new position of chief technologist, Wilson is the primary advisor on science and technology (S&T) and primary authority for the technical content and quality of the S&T portfolio to the AFRL commander.

"Dr. Wilson joins us from NASA's Jet Propulsion Laboratory (JPL) under the Intergovernmental Personnel Act (IPA)," said Maj Gen Paul Nielsen AFRL commander. "I am excited to see the tremendous motivation, insight, and down-to-earth approach she brings to the post."

The relocation to Dayton marks another return for Wilson to Ohio. Since her father's position as a chemist for Cincinnati-based Proctor and Gamble required frequent moves, Wilson volleyed from Cincinnati to England back to Cincinnati to Germany back to Cincinnati. Despite the constant uprooting, there were advantages to all the moves.

Due to her European schooling, Wilson graduated high school at the age of 15. As she turned 16, she began her freshman year at Mount Holyoke College in Massachusetts. Initially, Dr. Wilson studied chemistry, but soon physics grabbed her attention.

"The aspect of Physics I most enjoy is that it relies more on understanding than on memorization, and that it describes the underlying processes going on in everything around us."

Upon graduation from Holyoke, Dr. Wilson embarked on a 10- year graduate school odyssey that brought her within six months of a Ph.D. in High Energy Theory, and eventually earned her a Ph.D. in Solid State Experimental Physics.

"As I closed in on the first Ph.D., I decided it wasn't for me, " Wilson said. "I preferred a career field where I could interact with people and one in which I could explain the things I was working on to non-specialists. I was willing to undertake ten years of graduate study in order to work in a field I enjoyed – and I've never regretted that decision."

Upon receiving her doctorate from Wisconsin, Dr. Wilson worked for AT&T's Bell Labs. From Bell, Wilson moved to JPL in 1998. At JPL, Wilson rose from technical group supervisor in the Microdevices Section through the ranks to become JPL's Chief Technologist. While there, Wilson won the prestigious NASA Special Achievement Medal for her contributions to the New Millenium Program.

Wilson was originally asked to serve as a member of the rating/ranking panel charged with finding AFRL's Chief Technologist, but decided to withdraw from the panel, and compete for the position, herself.

"I was interested in working at AFRL for many reasons," said Wilson. "I have enjoyed my previous experiences with the Air Force, and looked forward to a broader exposure to the people and research areas across the lab that comes as part of taking a position such as Chief Technologist."

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http://extra.afrl.af.mil/news/index.htm

Bridge with composite deck opens

by Sue Baker, ASC Public Affairs

WRIGHT-PATTERSON AFB, Ohio — Less than a mile from where the Wright brothers perfected their "grand flying machine" on Huffman Prairie, the first vehicular bridge with an all-composite deck opened Oct. 22. Commemorated with a formal ribbon-cutting ceremony, the event marked another historic moment in the base's long history of advanced materials research and innovative application of emerging technologies originally created for military war fighters.

"The Materials and Manufacturing Directorate of the Air Force Research Laboratory here has pioneered development and implementation of advanced composite materials and processes into state-of-the-art, aerospace weapon systems," said Vince Russo, executive director of Aeronautical Systems Center. "These materials, key to U.S. defense supremacy, never corrode and perform exceptionally well at a fraction of the weight of metallic materials. In fact they also last much longer than conventional steel-and-concrete bridges.

"In 1997, our directorate championed transfer of these materials to the transportation community, by fielding the nation's first all-composite bridge, Tech 21, near Hamilton (Butler County), Ohio," Russo said. "That bridge is projected to last close to 150 years — much longer than conventional steel-and-concrete bridges."

In 1998, the directorate also partnered with the National Composite Center in Kettering to establish Project 100, a statewide initiative to promote affordable composite bridges. "And we're working to help NCC with its 'Composites for Infrastructure' initiative now," Russo said.

Manufactured with new methods and patent-pending materials by WebCore Technologies, Inc., third partner in the effort, the new bridge, which spans Hebble Creek at Gate 16A, will provide improved public access to historic Huffman Prairie for the Inventing Flight celebration in 2003. It features glass and carbon fiber-reinforced, foam core composite sandwich construction that is stronger and more lightweight than conventional materials.

In addition to Russo, others involved in the ribbon-cutting ceremony included Col. Michael W. Hazen, commander of 88th Air Base Wing; Ohio Sen. Steve Austria; Ohio Rep. Kevin DeWine; Dennis Rediker, NCC chairman; Louis Luedtke, NCC president and chief executive officer; William Harrison, Ohio Department of Transportation District 7 deputy director; and Anthony Whitmore, representing Ohio Gov. Bob Taft. **@**

Find additional Fe@tures on the web

ML's Plain Janes score CFC "three-peat"

WRIGHT-PATTERSON AFB, Ohio — It's time to start calling the 65X complex of Wright Patterson AFB's Area B "Title Town". Recently, residents of the complex, the AFRL/ML Plain Janes entered a sports Pantheon home to the likes of the Yankees, the Lakers, and the US Women's Soccer Team, as the Janes won the recent plane pull at the Combined Federal Campaign kickoff. ***(continued online)***

AF Chief Scientist honors AFRL's top scientist and engineers

by Jill Bohn, AFRL Public Affairs

WRIGHT-PATTERSON AFB, Ohio — Twelve Air Force Research Laboratory scientists and engineers from seven technology directorates claimed coveted chief scientist awards this year. The Air Force Chief Scientist gives awards annually to recognize individuals for accomplishments in science and technology in four major categories.

Senior Scientist Jane Lehr, AFRL's Directed Energy Directorate, received the 2001 Basic Research Award. The award recognizes scientific efforts and achievements of U.S. Air Force in-house basic research activities and identifies people who make outstanding contributions.

Lehr, who works in the High-Power Microwave Division at Kirtland AFB, was selected for her contributions to the field of compact pulsed power and ultrafast switching and for the development of novel analytic techniques for tailoring waveforms.

Dean Kocian, Human Effectiveness Directorate, Wright-Patterson AFB, received the Harold Brown Award for the conception, development and transition of the Helmet-Mounted Sensory Technology Program while assigned to the Crew Systems Interface Division. His work included everything from the development and refinement of the basic concepts through the fabrication, testing, and operational utility evaluations of HMT/D systems.

Named for the former Secretary of the Air Force, the Harold Brown Award recognizes individual achievement in Research and Development leading to improvement in Air Force operations.

The Air Force Research and Development award was given to four individuals and one team. The award recognizes accomplishments of personnel working in the area of Exploratory Technology Development or Advanced Technology Development:

Capt. James Lake, Propulsion Directorate, Edwards AFB, co-invented a solid rocket motor that provides future Air Force spacecraft with enhanced maneuverability and reliability.

Capt. Derek Lincoln, Materials and Manufacturing Directorate, Wright-Patterson AFB, developed polymeric nanocomposite as motor case and insulation materials for advanced solid rocket motor case systems.

Capt. Eduardo Meidunas, Space Vehicles Directorate, Hanscom AFB, developed advanced algorithms for the analysis of hyperspectral and computational tools.

Capt. James R. Reid, Sensors Directorate, Hanscom AFB, performed research which led to the Micro Electromechanical Systems.

Maj. Michael McGlockton and Capt. Craig Watry, Munitions Directorate, Eglin AFB of the Agent Defeat Weapon Analysis Team, developed a set of unique engineering models to assess the functionality and survivability of complex, thread-mounted warheads payloads under highly dynamic impact and penetration conditions.

The Air Force Science and Engineering Award recognizes personnel for outstanding contributions in areas of research, development and engineering. S & E awards were presented in the following categories:

In Research Management, Maj. Joseph McNamee, Propulsion Directorate, Wright-Patterson AFB was selected for his positive impact on the Power Division. He has raised awareness on aerospace power systems research and development at all levels within DoD.

In Exploratory or Advanced Technology Development, R. Scott Erwin, Space Vehicles Directorate, was honored for his contribution on programs leading to important technology transfer activities. Team winner, Narrow Band Source Team, Directed Energy Directorate, Kirtland AFB contributed to the field of high power microwave and antenna system development. **@**

Chief Technologist, from page 1

"I was interested in working at AFRL for many reasons," said Wilson. "I have enjoyed my previous experiences with the Air Force, and looked forward to a broader exposure to the people and research areas across the lab that comes as part of taking a position such as Chief Technologist."

"Dr. Wilson's appointment acknowledges her exceptional executive leadership ability." Nielsen said, "The position calls for her to analyze and integrate multiple complex technical programs and motivate a diverse collection of professional scientists and engineers."

To achieve the challenging tasks in front of her, Wilson expects to rely primarily on management by consensus. "I plan to take advantage of all the incredible brainpower our lab has," Wilson said. "I'll be seeking new ideas from individuals, stimulating the group to expand on and integrate these ideas, and building consensus for optimal corporate approaches to the technical challenges faced by the Air Force."

Wilson characterizes herself as a high-energy person with an informal style, exemplified by the tennis shoes she wears to the office. Wilson plans to use her energy and leadership to sustain AFRL's growth, and further improve the overall quality of the tech program.

"When the Air Force brought the various laboratories together in 1997, it was a major step in the right direction," Wilson said. "I want to keep pushing towards an integrated organization, and I am certain the rest of the laboratory does too. Through my experiences as a leader I learned a key rule to follow: 'If something is worth doing, it's worth doing well.'"

One of Wilson's top priorities focuses on expanding the interface with the external community. She hopes to stimulate further collaboration with university and commercial researchers, and enhance AFRL's presence within all parts of the community.

Wilson's Air Force resume boasts a broad range of involvement. She has twice served on the Air Force Scientific Advisory Board (SAB). Her SAB experiences include participation in three Summer Studies, including New World Vistas and the 2001 study on Technologies for Detecting Difficult Targets, in which she co-chaired the Urban Targets Panel.

Through her experiences at JPL, she considers herself a specialist in Space Technology, and brings some philosophy from that arena to her role as AFRL Chief Technologist. "History shows us that societies that don't explore beyond their current frontiers tend to stagnate and lose their vitality. This is an understandable outcome of evolution, as species that can only survive in a single niche are inherently more vulnerable to extinction. Similarly, to sustain a vital culture in the lab we must encourage our staff to explore beyond current technical boundaries," Wilson asserts. **@**

Airborne Laser changes long-time affiliation with SMC

by Ken Englade, Kirtland AFB ASC

KIRTLAND AFB, N.M. — Airborne Laser officials formally ended the nearly decade-long affiliation with the Space and Missile System Center Oct. 12 as they transitioned personnel management functions to the Aeronautical Systems Center.

The transfer from the Los Angeles Air Force Base, Calif., location to the one at Wright-Patterson AFB, Ohio, had been in the planning stages almost since the time the Airborne Laser was conceived in the early 1990s. Officials said it was moved forward this summer when the Air Force transferred SMC to its space command. Since ABL was not considered a space program, the transition to ASC was advanced by several years.

Both SMC and ASC were under the Air Force Materiel Command, also based at Wright-Patterson.

Under the transition, members of the Kirtland-based ABL System Program Office will transfer to ASC slots but all will remain in New Mexico. Officials also said ABL funding and program management transferred to the Ballistic Missile Defense Organization Nov. 1. BMDO is a joint service organization under the Office of the Secretary of the Defense that oversees missile defense programs for all the services.

Once that process has been completed, YAL-1A will be flown to Edwards Air Force Base, Calif., where the Beam Control/Fire Control, and laser segments will be installed and tested. The culmination of testing is scheduled to come late in 2003 when YAL-1A shoots down a Scud-like missile over the Pacific Ocean. **@**

AFRL HR earns FPMI's Best Practices Award

WRIGHT-PATTERSON AFB, Ohio — AFRL's Personnel Demonstration Project has been award the HR Best Practices Award by FPMI Communications. The award honors organizations that have demonstrated outstanding innovation and creativity in providing internal human resources services. Members of the Demo team, representing AFRL Headquarters, are Harold Vazquez, G. Michelle Neuner and Laura Leising. John Day, Director of AFRL Human Resources, was present to accept award at the HR Forum on Sept. 12 in Orlando, Fla. Implemented in FY95, goals of the project have included improving the quality of science produced by AFRL, enhancing work force quality and improving work force efficiency through innovative developmental opportunities and personnel policy changes. **@**

ML demonstrates MAUS technology at Russian Airshow

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Charles Buynak, pictured on right, an engineer from Air Force Research Laboratory Materials and Manufacturing Directorate, explains the Mobile Automated Scanner (MAUS) inspection system to U.S. Ambassador to Russia Alexander Vershbow during the Russian Aerospace Agency's MAKS' 2001 Airshow in Zhukovsky, Russia Federation. Buynak, a representative of the directorate's Nondestructive Evaluation Branch, ran an interactive, hands-on display of the inspection system, which is used in production manufacturing and aircraft maintenance environments for damage assessment, aging structure evaluation and repair validation of aircraft structures.

The MAUS demonstrations were given in the Department of Defense Technology Booth on a composite panel with simulated defects, allowing multi-national visitors to stop, examine the system in operation and to see the broad array of structural integrity information an operator is able to gather during the inspection process. The recent participation in MAKS' was the first time ever for the DoD. @

Regional leaders discuss technology transfer opportunities

By Jill Bohn, AFRL Public Affairs

WRIGHT-PATTERSON AFB, Ohio — Military, local government and business leaders came together recently to collaborate on the technology transfer opportunities throughout the regional area and across the state.

Hosted by the Dayton Regional Development Alliance, the forum entitled Tech Transfer in the Global Economy: Where Great Collaborations Take the Dayton Region was held at the National Composite Center in Dayton.

The forum which focused on creating new jobs and boosting the local economy drew the interest of Ohio Gov. Bob Taft who applauded attendees for its ability to using transform defense technology into commercial products. Taft announced a new full-time position that that will work in unison with the Air Force Research Laboratory and NASA Glenn.

"The Miami Valley is truly leading the way in creating the capacity and infrastructure for tech transfer and moving new ideas and research into the market place.

Taft said that the Miami Valley is model for the state and country based upon its political clout, technology prowess and organizational infrastructure. Dayton's focus on creating new jobs based upon new technologies has become his challenge since becoming Ohio's governor, he said.

REGIONAL OPPORTUNTIES — AFRL Commander Brig. Gen. Paul D. Nielsen spoke to regional leaders about technology transfer and it's positive contributions to the Miami Valley during a recent forum held in Dayton. Ohio Governor, Bob Taft, seated to Nielsen's left, was also a speaker at the forum.

AFRL Commander Major General Paul D. Nielsen spoke on behalf of Wright-Patterson Air Force Base. Wright-Patt is home to five of the laboratory's 10 directorates.

Nielsen said that a vital part of the Air Force's mission is passing on defense technology to the private sector.

One of the key components of national security is economic security, Nielsen said. He stated that national values have provided us with real steady core: ingenuity, integrity, hard work and dedication."

"Our economy has been the engine of opportunity," he stated. "In the Department of Defense, we believe tech transfer is part of our job.

The general cited a letter received by the laboratory from Jack Kilby winner of last year's Nobel Prize. Kilby, credited with the creation of integrated circuits in the 1950s, wrote to thank the Air Force on taking a risk and sticking by him in a time just after transistors had been invented. The spin-off of Kilby's technology led to the development of calculators, personal computers, and commercial satellites.

"When we spin off technology we help our community by encouraging economic growth, by encouraging innovation," Nielsen said.

Nielsen noted that composite materials offer similar opportunities. "They (composite) are one of those seminal ideas that can change society just as the integrated circuits did," he said.

When asked about future trends in tech transfer, Nielsen responded with three technologies – bio, nano and info. He explained that these technologies reinforce each other, revolutionizing the way we work, allowing for tech transfer to have a bigger role in the future. **@**

Tuskegee University and AFRL form research partnership

by Timothy R. Anderl, Materials and Manufacturing Directorate

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Charles E. Browning, director of the Air Force Research Laboratory's Materials and Manufacturing Directorate and Benjamin Payton, president of Tuskegee University, recently signed an Educational Partnership Agreement at Tuskegee University in Tuskegee, Ala.

This agreement, the first of its kind with a Historically Black College and University, will leverage the strengths of both organizations and encourage the study of science, mathematics and engineering at all levels of education. Under the agreement, Tuskegee University students will be provided course credit to undertake research and development projects related to the directorate throughout the year while at both the university and at Wright-Patterson AFB.

The Materials and Manufacturing Directorate will provide access to the directorate's hardware, personnel, equipment and facilities, and AFRL personnel will teach courses and materials related science, mathematics, and engineering at the university.

The directorate has an 85-year history of innovations that have been instrumental in creating and sustaining the U.S. Air Force, and Tuskegee University has a 120-year history of innovation, which is deeply rooted in the legacies of Booker T. Washington and George Washington Carver. Tuskegee University also produced the country's first African American Air Force General, Daniel "Chappie" James, Jr. **@**

Net Index

Due to the number of submissions we receive, some sections of *news@**afrl*** are available exclusively on-line. The on-line version of the newsletter allows users to view the AFRL corporate calendar, news releases generated by AFRL headquarters, operating instructions, L@b L@urels and Roundups sections.

The L@b L@urels section of the electronic newsletter is dedicated to members of Air Force Research Laboratory who receive awards and honors. The Roundups section of the electronic newsletter keeps Air Force Research laboratory employees informed about contracts AFRL has awarded. Below is an index of articles one can find in each of these on-line sections.

Roundups

- **Rome awards $8.5M contract to Draper Laboratory**
- **Sensors Directorate awards contract to Utica firm**
- **AFRL awards contract for photonic crystal researach**
- **AFRL awards nearly $14.3 million to universities**
- **AFRL Rome awards $49.9 contract to CSP**
- **Air Force awarded patents to detect wiring problems**

L@b L@urels

- **AFRL engineer receives Technology Transfer award**

George Schmitt

For more on these stories see news@afrl
http://extra.afrl.af.mil/news/index.htm

General Nielsen tours new Rome, N.Y. high school

ROME, N.Y. — Rome school superintendent Lorenzo Rizzo welcomes AFRL commander Maj. Gen. Paul D. Nielsen to the construction site for the new Rome Free Academy being built at the Griffiss Business & Technology Park. The general participated in groundbreaking ceremonies for the $45.4 million school in May 2000. During an October visit to Rome, Nielsen viewed progress on the facility that will serve more than 1,800 students when it opens for the 2002-2003 school year. (Air Force photo) @

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To submit L@b L@urels or Roundups from your directorate, send a query to AFRL Public Affairs at:

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